Lesson 4

Planting the Seeds for Healthier Eating

TOPIC: Fruits and Vegetables Grow From Seeds

Now that students have a deeper understanding and appreciation of the colorful world of fruits and vegetables, it is time to learn where these foods come from. Students will discover that all fruits and vegetables start as seeds and grow into plants. They will also feel a sense of pride and accomplishment when they get a chance to grow something themselves.

Supplies and Preparation

Discover *MyPlate* Components*

- ***The Five Food Groups*** poster
- **Food Cards**
- **Student Workbook** (WB; Lesson 4, Activities 1-3):
  - [WB, p. 2] **STAR Chart**
  - [WB, p. 20] ***Time to Grow!***
  - [WB, p. 21] ***1, 2, 3, 4 — Grow, Fruit and Veggies, Grow!***
  - [WB, p. 22] ***Time for Strawberries***

Additional Supplies

- Suggested books** for **Book Club**:
  - ***In the Garden with Dr. Carver*** by Susan Grigsby (Albert Whitman & Company, 2010)
  - ***Water, Weed, and Wait*** by Edith Hope Fine and Angela Demos Halpin (Tricycle Press, 2010)
  - ***Apple Countdown*** by Joan Halub (Albert Whitman & Company, 2009)
  - ***Tops and Bottoms*** by Janet Stevens (Harcourt Children's Books, 1995)
- Planting demonstration materials:
  - Dry pinto beans (1 per student)
  - 1 container (large enough to soak all beans in 1 cup of water)
  - Water (approximately 1 cup)
  - 1 spray bottle (to hold water)
  - 3-4 sheets of paper towels
  - 3-4 paper plates
  - Plastic wrap
  - Small clear plastic cups with drainage holes punched in the bottom (1 cup per student)
  - Potting soil (approximately 4 quarts)
  - Plastic spoons
  - Baking sheets/trays
  - Letter-sized plain white paper (3 sheets per student)
- Crayons, white paper, construction paper, scissors, glue, math manipulatives (or pennies, pretend money, or buttons for dramatic play), bulletin board paper, paint, star stickers, stapler

* Order or download at **http://teamnutrition.usda.gov**.

** Mention of these materials is not an endorsement by the U.S. Department of Agriculture over other materials that may be available on this subject.

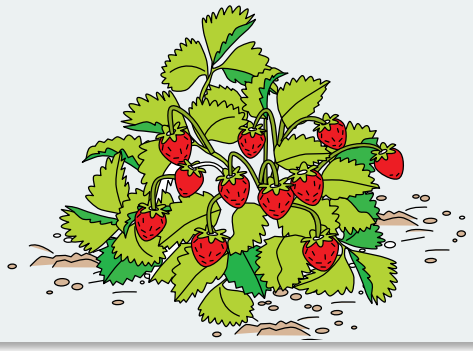
Learning Objectives

Students will be able to...

- Describe how edible fruits and vegetables grow from a seed to a plant.
- Name three things a plant needs to grow.

Essential Questions

- Where does food come from? How do fruits and vegetables grow?
- What does a plant need to grow?



Introduction

Warm Up Whole Group (20 minutes)

1. Begin by asking students what kinds of fruits and vegetables they ate for dinner yesterday. Invite students to point to any that are on ***The Five Food Groups*** poster, or draw some of their choices on the board. Ask: *Where did those foods come from? Did your mom or dad buy them at the grocery store?* As they share, draw a store or parents on the board.
2. Next, ask: *Where did the grocery store get them?* Allow students to think about experiences and observations, then share their ideas. For example, they may suggest farms, gardens, or trees.
3. Ask: *Have you ever seen fruits and vegetables growing (like when apple picking or in a garden at home)?* Explain to students that fruits and vegetables come from plants. Plants are living things. If possible, ask students to join you at the window and look outside. Ask students to name or point out different plants — trees, shrubs, flowers, etc. — that they see. Tell students that fruits and vegetables grow from seeds into plants, just like flowers do.
4. Explain that the fruits and vegetables that we eat are grown on plants in gardens and orchards, on farms, and in greenhouses. Ask students whether they have ever been to a farm or know of a garden in their community. People like gardeners and farmers work hard every day to grow plants, keep them healthy, and pick the fruits and vegetables we eat.
5. Ask students: *What do plants need to grow?* Explain that plants need certain things to grow: food (in soil), water, light, space, warmth, and air. Tell students that they will grow their own seeds in this lesson and learn how fruits and vegetables grow.

★TEACHER TIP★

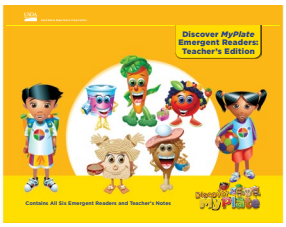
If you have a school garden, or access to a playground outside, continue this discussion outside while looking at plants.

Core Learning Activities

The following activities help students meet the lesson's learning objectives, but you may incorporate them into your class time in any order.

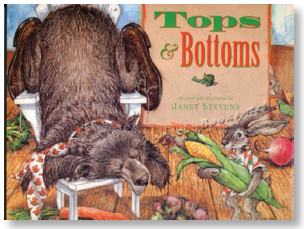
Book Club Whole Group (time will vary)

Read books with your class to further the learning about how fruits and vegetables grow. Below are suggested books with questions, but you may find other selections in your library that can be used to generate a similar discussion.



Review and make a list of the foods mentioned in all six **Emergent Readers** using the teacher version. Ask students to identify what foods from the list can be grown in a garden. Provide photographs of some of these foods growing in a garden or farm. Have students guess which food item is growing in the photograph. The readers may be used again with the writing exercise in **Cafeteria Connections** and during **Center Time**.

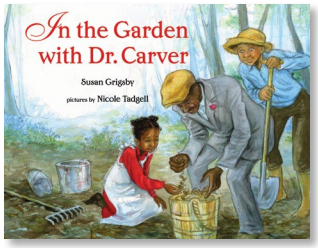
Book Club (continued)



Cover art © 1995 by Janet Stevens

Tops & Bottoms by Janet Stevens — In this trickster tale, Hare tricks Bear when planting crops for them to share. When Bear chooses the top crops, Hare only plants root vegetables, and vice versa. Ask:

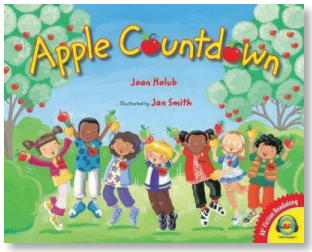
- *Who agrees to do the hard work and plant the crops?*
- *What does Bear like to do?*
- *What types of vegetables are "tops" and grow above ground?*
- *What types of vegetables are "bottoms" and grow below ground?*



Cover image © Nicole Tadgell, published by Albert Whitman & Company

In the Garden with Dr. Carver by Susan Grigsby — Dr. George Washington Carver visits a town in rural Alabama in the early 1900s to help the grown-ups with their farms and the children with their school garden. He also prepares a delicious lunch made with garden plants, like sweet potato, peanuts, and dandelion greens. Ask:

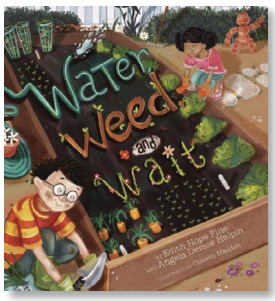
- *Who comes to visit the school?*
- *How did Sally know what the rosebush needed? What did she see that helped her figure it out?*
- *What do plants need to grow and be healthy?*
- *What kinds of foods do the students eat at the picnic?*
- *What food group do peanuts belong to? Can you think of another food that is made out of peanuts?*



Cover image © Jan Smith, published by Albert Whitman & Company

Apple Countdown by Joan Halub — This whimsical story of a class field trip to an apple farm counts down from 20 — and counts everything from miles to the farm, to cows and ducks, to rows of apple trees. Ask:

- *Where did the students go on their field trip? What did they do there?*
- *How do apples grow?*
- *What food group do apples belong to?*
- *What animals do the students see?*



Cover art © 2010 by Colleen Madden

Water, Weed, and Wait by Edith Hope Fine and Angela Demos Halpin — Classmates at Pepper Lane Elementary prepare a school garden full of fruits and vegetables with the help of their teacher Miss Marigold and even the school's grumpy neighbor. Ask:

- *Who helped clean up the playground for the garden?*
- *What did the students do to help their garden grow?*
- *How did the class celebrate after their plants grew?*
- *What type of food did they serve at the garden party?*

Planting Demonstration

Whole Group (25 minutes, plus 5-10 minutes in subsequent days as plants grow)

Use the supplies listed on p. 40 for the following hands-on activity. It will activate your students' imaginations and cement their understanding of how plants — and fruits and vegetables — grow! This activity is intended for the observation of plant growth and not for the consumption of sprouts.

Instructions:

- Cut white paper in half and distribute one half to each student. Give each student a bean to draw a picture of, and have them write "day 1" on top of their drawing.
- Collect the beans, put them in a container, and add water to cover. Allow to soak overnight.
- Dampen the paper towels and place each on a paper plate. Place 5 to 8 beans on each plate, keeping them to one side of the plate and separated slightly (beans should not be touching). Fold the empty half of the paper towel over the beans to cover them. Then cover the plates with plastic wrap.
- Store the beans in a dark location for about three days, after which the beans will start to sprout. Check the beans. Using another half sheet of paper, have students draw another picture from observation and write "day 3" on top.
- Using spoons, have students place potting soil into their plastic cup, a little more than half full.
- Let students place one bean sprout in a cup, near the edge, so they will see it through the side of the cup once it is covered with soil. Then, have students add another half inch of potting soil.
- Have students water the cups using a spray bottle until the soil is moist. Place them on trays by a window.
- Every two days, or when students notice a visible change, have them draw another picture (on a new half sheet of paper) of the plant and indicate the day. Continue until the plant grows to at least an inch above the soil. Each drawing can be stapled behind the previous drawing, ultimately forming a flip book of how plants grow.
- Have students describe what they notice during the process and at the end of the activity. What is growing? (*A plant/sprout*) Where is it growing from? (*The bean*) What do they think will grow from the bean seed? (*More beans*)

As a class, complete the **Student Workbook** activities ***Time to Grow!*** [WB, p. 20] and ***Time for Strawberries*** [WB, p. 22] to process and emphasize the growing cycle of a plant and what students will observe during their bean-growing activity. For ***Time to Grow!*** have students read each step about how a bean plant grows from seed to harvest. Have them describe what they see, if possible, using one of the bean sprouts or plants you are growing as a visual reference. Holding the plant, ask students: *What step is this plant in? What steps did it go through to get to this point? What happens next? What do we need to do to help it grow?*

★TEACHER TIP★

You may want to tie this demonstration to **Earth Day Celebration** ideas. See the Classroom Celebrations on pp. 61-65 for ideas.

Cafeteria Connections Whole Group (each activity 30 minutes)

Farm to School

If your school has a farm-to-school program, invite a local farmer to talk with the class about what food he or she grows, when it is planted and harvested, and what foods (if any) the farmer produces for the school. Or, invite a chef from a local restaurant to talk to students about where he or she gets food, and what fruits and vegetables are used in the menu. Ask students: *Have you seen or eaten any of these foods in the cafeteria?*

Like to Eat Fruits and Vegetables

As a class, review the school lunch menu. Highlight foods students have learned about during **Book Club** (such as, George Washington Carver's peanut butter, farm-fresh apples, lettuce that grows as "tops," and carrots that grow as "bottoms"). Have students practice reading, then writing, sentences in the following format using new food vocabulary and sight words:

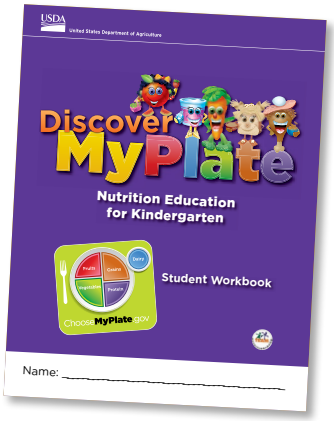
- I like to eat _____ (fruits or vegetables).
- I like to eat _____ (color) _____ (fruits or vegetables).
- I like to eat _____ (color) _____ (fruits or vegetables) because_____.

Center Time

Choose any of the following activities for students to do during Center Time.

Literacy Center Small Group (time will vary)

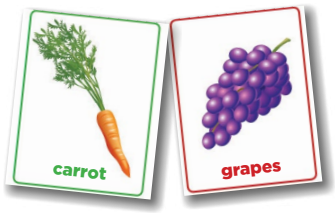
Use the **Emergent Readers** for listening, guided reading, or read-aloud exercises with students. Review sight words and new vocabulary learned in this lesson to build fluency and phonemic awareness, teach spelling patterns, practice writing, and promote key literacy concepts.



Student Workbook Small Group (time will vary)

Have students complete workbook pages individually or in small groups. This can be done during **Center Time**.

- ***Time to Grow!*** [WB, p. 20] In this activity, children read about and color the steps for a bean plant to grow. Read the steps as a class. Introduce or review words like "grow," "eat," and "seed."
- ***1, 2, 3, 4 – Grow, Fruit and Veggies, Grow!*** [WB, p. 21] Students practice counting skills in this activity, while also learning how some fruits and vegetables grow.
- ***Time for Strawberries*** [WB, p. 22] In this sequencing activity, students will discover how strawberries grow and learn to spell and write out the sight word "like" in a sentence.



Food Cards Small Group: 3-4 students (15 minutes)

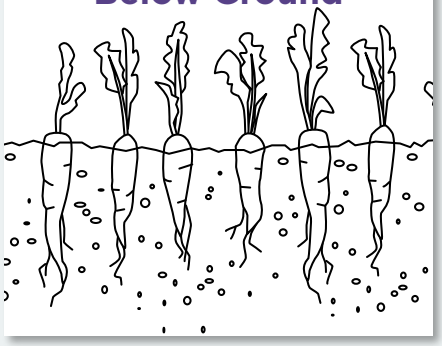
Produce Pick!

Draw pictures on the board of a tree and the soil line, showing below the soil line (dirt) and above (sky). Sort the **Food Cards** so that students can select either a fruit or a vegetable card. Once "picked," discuss how that food grows — on trees, under the ground, or above ground. (see examples p. 45) When the class decides how that fruit or vegetable grows, have students come up and point to the area of the picture that matches how it grows. Talk about experiences students may have had picking fruits and vegetables.

How Do Fruits and Veggies Grow?

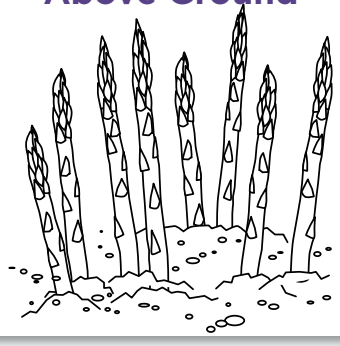
Did you know that fruits and vegetables grow in different ways and come from different parts of plants?

Below Ground



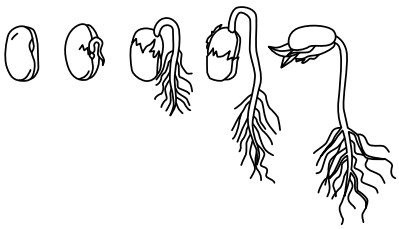
Some grow underground, such as **carrots**, onions, beets, and potatoes.

Above Ground



Some grow above ground, such as celery, rhubarb, **asparagus**, zucchini, tomatoes, avocados, oranges, watermelon, strawberries, apples, bananas, broccoli, pears, peppers, artichoke, leaf lettuce, spinach, grapes, kale, and kiwi.

As Seeds



Some are the seeds of a plant, such as corn, green peas, **beans**, and sunflower seeds.

Tip! See **Student Workbook** handouts ***Time to Grow!*** and ***Time for Strawberries*** [WB, pp. 20, 22] for illustrations showing the steps of how a vegetable and a fruit grow from a seed.

Dramatic Play Small Group (15 minutes)

Farm Fresh!

During dramatic playtime, allow students to run a pretend farmers market. Tell them that a farmers market is where growers go to sell their fruits and vegetables. Students can make signs selling their fresh fruit and vegetables (pretend foods, hand-drawn ones, or **Food Cards**), and sort them by color. They should write a price by each sign. Students can take turns running the market as farmers and "selling" their fruits and vegetables, suggesting foods for meals or snacks. Other students can "shop" for goods as customers using money (pennies, pretend money, buttons, or other math manipulatives in the classroom).

Reflection & Assessment Whole Group (20 minutes)

LESSON 4 ACHIEVEMENT MARKERS

- Planted a bean sprout
- Identified the sequence in the plant life cycle as a bean grows from a seed to plant
- Named three things a plant needs to grow

Award a star or sticker for each achievement!

At the conclusion of the lesson, discuss as a class where fruits and vegetables come from and what plants need to grow. Have students draw one new fruit and one new vegetable that they learned about in this lesson. Help them write each fruit and vegetable name on their drawings. Display their labeled fruits and vegetables on a bulletin board. You can create a "My Food Grows" display with fruits and vegetables growing in a garden or on a tree, or create a "My Salad Grows" display with student drawings in large "salad" bowls. Add more fruits and vegetables to the board each day or week as you share what the class has tried, and reflect and build upon student vocabulary.

Reward each student with a star or sticker for his or her efforts and ability to meet this lesson's achievement markers (see sidebar). Students may add their stars or stickers to the **STAR Chart** [WB, p. 2].

If you have time, check in with individual students and review information with those who need more assistance.

Extra Helpings

Growing Together

Small Group (40 minutes)

Students can paint a group mural of a garden growing different fruits and vegetables. Each student can sign his/her name somewhere on the painting, and it can be displayed as part of a "Growing Together" display near the plants that they are growing.

Whole Group (time will vary)

Take a field trip to a local farm to see fruits and vegetables growing. Or invite a local farmer to visit the class and talk about a fruit or vegetable he/she is growing.